

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference Jg-2913-PCT	FOR FURTHER ACTION		See Notification of Transmittal of International Preliminary Examination Report (Form PCT/PEAA16)
International application No. PCT/GB 03/04961	International filing date (<i>day/month/year</i>) 14.11.2003	Priority date (<i>day/month/year</i>) 25.11.2002	
International Patent Classification (IPC) or both national classification and IPC F01D17/10			
Applicant LEAVESLEY, Malcolm, George			

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.



2. This REPORT consists of a total of 7 sheets, including this cover sheet.

☐ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the opinion
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 03.06.2004	Date of completion of this report 03.02.2005
Name and mailing address of the international preliminary examining authority:  <div style="margin-left: 20px;"> European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340 - 2040 Tx: 31 651 epo nl Fax: +31 70 340 - 3016 </div>	Authorized Officer de Rooij, M Telephone No. +31 70 340-2306 

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JC20 Rec'd PCT/PTO 17 MAY 2005

International application No. PCT/GB 03/04961

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

Description, Pages

1-20 as originally filed

Claims, Numbers

1-30 as originally filed

Drawings, Sheets

1/15-15/15 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:
- ☐ the drawings, sheets:

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5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	2-11,13-18,20-29
	No: Claims	1,12,19,30
Inventive step (IS)	Yes: Claims	3-5,9-11,14-20,23,24,26,28
	No: Claims	1,2,6-8,12,13,21,22,25,27,29,30
Industrial applicability (IA)	Yes: Claims	1-30
	No: Claims	

2. Citations and explanations

see separate sheet

Re Item V

Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Reference is made to the following documents:

- D1: US 5 855 117 A (SCHADE MARCO ET AL) 5 January 1999
- D2: DE 199 24 228 A (3K WARNER TURBOSYSTEMS GMBH) 7 December 2000
- D3: GB 2 271 814 A (LEAVESLEY MALCOLM GEORGE) 27 April 1994
- D4: EP 0 678 657 A (LEAVESLEY MALCOLM GEORGE) 25 October 1995

2. The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claim 1 is not new in the sense of Article 33(2) PCT.

2.1 The document D1 discloses (the references in parentheses applying to this document):

A variable turbocharger apparatus, ... comprising vanes (10) which are mounted in the chamber and which are for accurately directing exhaust gases on to the turbine, a piston (4) which is slidable and which is positioned between the housing and the turbine, and control means (col. 3, l. 40) which is connected to the piston and which is for controlling the sliding movement of the piston, the piston having an end which is nearest the bearing assembly and which defines a gap, the size of the gap being variable in dependence upon the sliding of the piston under the control of the control means, the size of the gap being effective to control the amount of the exhaust gases that act on the turbine, thereby accurately controlling the speed of rotation of the turbine and thereby the amount of air conducted by the compressor through the outlet to the engine, and the variable turbocharger apparatus having at least one bypass aperture (12) which is closed when the size of the gap is at a minimum (fig. 1) and which opens when the gap reaches a predetermined size (fig. 3), the opening of the bypass aperture being such as to allow exhaust gases that are not required for acting on the turbine to bypass the turbine.

It is noted that for a person skilled in the art, the word "turbocharger" inevitably implies the presence of "a housing, a compressor ... bearing assembly for permitting the rotation of the turbine", since normal functioning of the turbocharger would not be

possible without these features (see also Guidelines 12.04). In D1, these elements have appropriately been left out for reasons of simplicity.

D1 therefore discloses all features of claim 1, and the subject-matter of claim 1 is not new.

3. Furthermore, it is noted that the subject-matter of claim 1 does not involve an inventive step in the sense of Article 33(3) PCT in view of the disclosure in document D2.

3.1 The subject-matter of claim 1 only differs from the variable turbocharger apparatus in D2 in that vanes are mounted in the chamber, which are for accurately directing on to the turbine.

3.2 This is however an obvious design possibility for a person skilled in the art, and the subject-matter of claim 1 cannot be regarded as involving an inventive step on the basis of this design feature.

4. Dependent claims 2, 6-9, 12, 13, 21, 22, 25, 27, 29 and 30 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of novelty and/or inventive step, since they are known from documents D1 and D2, or are merely a matter of normal design procedure, see e.g.:

- claim 2: D2, figures
- claim 6: D2, figure 1
- claim 7: obvious possibility
- claim 8: D2, figure 1
- claim 9: obvious possibility, see e.g. D3
- claim 12: D1, "flow guide structure" 6
- claim 13: normal design procedure
- claims 21 and 22: D2, fig. 1
- claim 25: normal design procedure
- claim 27: obvious possibility, see. e.g. D3, fig. 1
- claim 29: obvious possibility, see. e.g. D4, col. 3l. 10 - 16

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- claim 30: D1, figures

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5. The combination of the features of dependent claims 3-5, 10, 11, 14-20, 22-24, 26 and 28 is neither known from, nor rendered obvious by, the available prior art.

The necessary structural changes to the available prior art (D1, D2) to arrive at turbochargers according to these claims would require inventive skill and go beyond the customary practice of a person skilled in the art.